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ABSTRACT

A study explored some of the ways that the members of a medical educational institution make sense out of the radical pedagogical innovation taking place in their school. Interviews and focus groups were conducted with members at "MWCOM" (a pseudonym), then data were analyzed according to three primary themes which revolve around how organizational members make sense of the problem-based learning (PBL) program and the PBL students. First, how organizational members expressed their view that those enrolled in the PBL curriculum were afforded more organizational resources was explored. Then, organizational members' perceptions that the PBL students enjoyed a more positive quality of life than did their traditionally educated counterparts was examined. Finally, how organizational members related their perceptions that the PBL students were undergoing a positive role socialization with respect to their chosen profession was focused on. An aim of the study is to enrich understanding of the establishment of innovation within one of the most traditional educational institutions--medical education organizations. This study is situated squarely within the context of medical education, an institution which has few rivals in the system of social discourse which privileges medical knowledge above most other forms of knowledge. It is hoped that by providing a "real life," day-to-day picture of the exigencies inherent in accomplishing the PBL diffusion, this study can be of use to educators who wish to introduce innovative programs into educational systems with similar concerns. (Contains 34 references. An appendix gives the location and describes the population, support staff, faculty, and administration of "MWCOM.") (NKA)

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The problem with problem-based learning: Organizational members make sense of pedagogical change in a medical school curriculum

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Abstract

It is our primary goal in this study to elucidate some of the ways that the members of a medical educational institution make sense out of the radical pedagogical innovation which is taking place in their school. After conducting interviews and focus groups with the members at MWCOM, we have organized our analysis according to three primary themes which revolve around how organizational members make sense of the PBL program and the PBL students. First, we explored how organizational members expressed their view that those enrolled in the PBL curriculum were afforded more organizational resources than were those students enrolled in the traditional curriculum. Second, we examined organizational members' perceptions that the PBL students enjoyed a more positive quality of life than did their traditionally educated counterparts. Finally, we focused on how organizational members related their perceptions that the PBL students were undergoing a positive role socialization with respect to their chosen profession.

An important aim of our study is to enrich our understanding of the establishment of innovation within one of the most traditional educational institutions--medical education organizations. This particular study situates itself squarely within the context of medical education, an institution which has few rivals in our system of social discourse which privileges medical knowledge above most other forms of knowledge. Although scholars such as Bloom (1986) and Kaufman (1985) recognize that it is just as important to understand how educational innovation gets accomplished at such levels as it is to measure the macro-outcomes of such innovations, there has been very little literature which sufficiently addresses this concern, thus we know little about how such processes work within the specific context of medical education. It is our hope that by providing a "real life," day-to-day picture of the exigencies inherent in accomplishing the PBL diffusion, this

particular study can be of use to educators who wish to introduce innovative programs into those educational systems with similar concerns.

> I listen to their lectures and take their tests in a large, anonymous lecture hall. But I don't get close to many of the faculty. I feel like I'm always on trial, jumping through their hoops, not yet worthy of their trust.
>
> I don't see the point of all this material they're throwing at us. They don't connect it with patients or any real problems. But I'm not going to make waves. I'm just going to get through.
>
> I wanted to be more human and not lose touch with my friends. I wanted to continue running my church youth program and maybe teach the kids about first aid and disease prevention. But look what I've become--a drone. I sit in one class after another. I study all evening. I've had to drop my church work and worry that my friends will drift off.

These comments, recorded by Kaufman (1985), provide a clear, albeit brief, look into the thoughts of most students who study medicine in the United States. We have lost count of the times that we have listened to identical comments made by the medical students who attended the medical school in which we were employed for two years. As Kaufman notes, such remarks reflect the plight of students caught up in a system of medical education which too often presents coursework as "more of a hurdle than an educational adventure" (p. 1). In such a system, students rarely view their instructors and classmates as allies.

Indeed, as a number of authors indicate (e.g., Albanese & Mitchell, 1993; Barrows, 1986; Slotnick, 1996), the competitive educational environment found in the majority of medical schools forces students to form adversarial relationships with their classmates, as well as with their professors. Finally, as Kaufman (1985) points out, and as we have observed all too often, many students who enter the medical field with the worthy goal of helping humankind discover that their idealistic spirits are systematically leveled by the overwhelming schedule of lectures, labs, and homework. However, there is a change afoot.

Medical education in the United States is undergoing one of the most intense transitions since 1910 when Abraham Flexner effectively "cleaned house" by doing away with a large percentage of the country's marginal medical schools[1]. Today, the changes involve reassessments of the very methods of medical education. In a growing number of medical schools, such reappraisals have led to an alternative model of medical education based upon a pedagogical concept called problem-based learning (PBL), which was first introduced to medical education at McMaster University in Ontario, Canada. Since it was introduced at McMaster in the late 1960s, PBL curricula have developed at such prestigious medical institutions as Harvard University, University of New Mexico, University of Sherbrooke, Ohio State University, and Michigan State University.

In this section we introduce the reader to the concept of problem-based learning--an organizational innovation which is occurring within the particular medical education institution which we investigate. After briefly explaining the pedagogical theory behind problem-based learning, we justify the usefulness of approaching this study via cultural/critical interpretivist methods.

According to a number of medical educators (e.g., Barrows, 1986; Kaufman, 1985; Slotnick, 1996; Wilkerson & Feletti, 1989), a problem-based learning approach stems from the premise that learning occurs best when associated with concrete clinical problems. Students involved in a problem-based learning (PBL) medical education program explore basic science content by discussing and hypothesizing about clinical problems.

[1] The first detailed knowledge of the generally lamentable condition of medical education came with the publication of Abraham Flexner's Medical Education in the United States and Canada, an investigation carried out under the auspices of the Carnegie Foundation for the Advancement of Teaching, and in cooperation with the American Medical Association Council. The cornerstone of Flexner's recommendation was the commitment to higher and more uniform academic standards for medical education. Key among the many solutions to such an end was Flexner's argument that all proprietary schools be closed and that each remaining medical school become affiliated with a major university.

According to Margetson (1991), the objective of a PBL medical education is to prepare physicians who are "able to evaluate and manage patients with medical problems effectively, efficiently, and humanely" (p. 64). Richards et al. (1996) echo this, noting that the primary goal of a PBL curriculum is to "anchor learning in a meaningful, authentic context" (p. 187).

The theory behind PBL has continued to garner support from a number of educational researchers (e.g., Barrows & Tamblyn, 1980; Friedman, de Bliek, & Greer, 1990; Knowles, 1980) who argue that active participation in problem-based learning produces longer-lasting effects than the passive absorption of information which occurs in other, more traditional forms of pedagogy. Additionally, Slotnick (1986) observes that the student-centered instruction, which is the hallmark of PBL, capitalizes on students' experience and enhances motivation for self-directed learning. According to Albanese and Mitchell (1993), problem-based approaches also facilitate the development of students' collaborative skills without stifling individual responsibility. Additionally, Albanese and Mitchell argue that by using specific problems when approaching learning content, students develop exceptional skills in critical thinking, problem-solving, and self-direction.

Kaufman (1985), who developed the PBL program at the University of New Mexico and who has written a book detailing its implementation, provides a useful overview of the benefits of PBL within the medical school context. A number of medical educators (e.g., Albanese & Mitchell, 1993; Bloom, 1986; Duban & Kaufman, 1985; Moore, Block, Briggs, & Mitchell, 1994; Richards et al., 1996; Waterman & Butler, 1986) note that medical students enrolled in PBL curricula are taught to approach vaguely defined clinical problems with appropriate scientific reasoning, and thus, these students are better prepared to function effectively in an environment of ambiguity and uncertainty. Moreover, Duban and Kaufman (1985) argue that students trained with a PBL approach have excellent research assessment skills, resource utilization skills, as well as the ability to

use interaction with patient problems as a stimulus for self-directed study. Additionally, many researchers (e.g., Davis, Nairn, Paine, Anderson, & Oh, 1992; Feletti & Carver, 1989; Glick, 1991) assert that medical students trained in a PBL format are able to demonstrate the outstanding interpersonal communication skills and cultural awareness that are necessary for facilitating patient communication and patient understanding of the medical problem.

Furthermore, scholars (e.g., Barrows, 1986; Bickley, Donner, Walker, & Tift, 1990; Bordage & Lemieux, 1991) note that medical students enrolled in PBL programs demonstrate strong data collection skills as well as an appropriate range of interview and examination techniques. Finally, Kaufman (1985) notes that medical students trained with PBL methods are also able to organize the information into a concise, problem-oriented document, analyze it, and present it succinctly in an oral fashion. Costello, Parry, and Thomas (1995) defend the approach, arguing that:

> If the objective of medical education is to prepare physicians who are able to evaluate and manage patients with medical problems effectively, efficiently, and humanely, the traditional approach of delivering information for two and a half years and expecting an automatic transfer to clinical problems in the second half of medical school is counter-productive to this objective. (p. 6)

Despite the optimism embraced by those who espouse a PBL approach to medical education, as well as the analyses which document the successes of PBL educated students vis-à-vis their traditionally educated counterparts (e.g., Donner & Bickley, 1989; Post & Drop, 1990; Woodward & Ferrier, 1983), the reality is that medical education institutions largely remain resistant to this pedagogical innovation--a resistance which we will discuss in greater depth in the following section.

Problem-based Learning: A Radical Educational Innovation Comes to School

> There is nothing more difficult to plan, more doubtful of success, nor more dangerous to manage than the creation of a new order of things. . . .Whenever his enemies have the ability to attack the innovator they do so with the passion of partisans, while the others defend him sluggishly, so that the innovator and the party alike are vulnerable.
>
> Niccolo Machiavelli, The Prince
> (Quoted in Rogers, 1995)

Albanese and Mitchell (1993) argue that, despite empirical evidence which supports the value of PBL curricula, the medical education establishment continues to uphold educational models which privilege traditional lecture learning styles. This is not surprising when one considers that medical education is a key component in one of the most established institutions existing in Western society. Miller (1980) comments on the nature of educational innovation within the medical community, noting that, "very few schools have managed to establish any effective system for continuously monitoring anything more than the content of instructional programs; and even here the effort has been sporadic and attended by indifferent success" (p. 210). Bloom (1986) echoes Miller, lamenting "the powerful inertia to change that is inherent in the structure of the modern medical school" (p. 235).

A host of scholars (e.g., Berkson, 1993; Goodenough, 1991; Kantrowitz & Kaufman, 1985; Newble & Clarke, 1986; Slotnick, 1996) observe that, while it is increasingly apparent that "the old models of medical education are simply inadequate to meet the newer expectations regarding the delivery of health care," the creation of a major reorientation of a medical school curriculum is a project which meets tremendous resistance from the medical education community at large (p. 224). The barriers for the success of such an endeavor range from economic constraints to the political climate and also include issues of territorial control within each medical institution. As Kantrowitz and Kaufman suggest, the forces resisting change are hardy and have deep roots in a

system with values that are often quite divergent from those of the innovators. As with the case of most radical innovations, the institution of PBL in the medical education system has proven to be a confounding problem for those who seek educational reform.

Rogers (1995) emphasizes the fact that most innovations taking place within organizational settings create conflict--the more radical the innovation, the more organizational resistance it encounters. As we will discuss, there is evidence that a fervent debate about the implementation of PBL is occurring within medical education institutions. Indeed, many scholars (e.g., Anderson, 1989; Blumberg & Eckenfels, 1988; Bridgham, Solomon, & Haf, 1991; Coles, 1990; Kaufman, 1985) have established that radical departure from the traditional mode of medical school instruction has created tensions which emphasize key philosophical differences between the educational perspectives of the organizational members of those schools in which PBL is becoming part of the organization.

Despite the resistances, a number of scholars (e.g., Albanese & Mitchell, 1993; Barrows, 1986; Goodenough, 1991; Kaufman, 1985) point out that PBL curricula are becoming more and more prevalent in medical and other professional schools. As we briefly explained earlier, and as Goodenough (1991) argues, the rationale for such an educational focus is obvious--students who, from an early point in their education, receive experiential training are likely to be more comfortable and adept as they begin to practice their respective trade. However, as many scholars (e.g., Kaufman, 1985; Neufeld, Woodward, & MacLeod, 1989; Woodward & Ferrier, 1983) affirm, supporters of such PBL curricula often encounter great opposition from those who support traditional medical school curricula.

Typically, a traditional curricula divides the first two years of medical education into separate courses which are delivered in a lecture format. Although such courses offer medical students knowledge of basic sciences, they provide little clinical experience, unlike the experientially-based PBL curricula. Ostensibly, opponents of PBL curricula argue

that, because PBL students must procure most of their own information, there are likely to be large gaps in these students' knowledge of basic sciences. However, Kaufman (1985) adroitly identifies the fact that he and his team encountered more than pedagogical opposition in instituting a PBL curriculum at the University of New Mexico:

> In the process of changing our curriculum, far more time than planned was spent in the trench warfare of institutional politics, and less in the more lofty intellectual pursuits concerning program design and evaluation. But should one expect anything different? Such curriculum innovations find a more receptive audience among consumers, educational theorists, practicing physicians, and legislators. But those most intimately involved in medical education are medical school faculty members who, by training and professional interest, are often most distant from the eventual professional lives of the students they educate. (p. xxii)

Based on our own observations, we agree wholeheartedly with the sentiments which Kaufman expresses. Indeed, we argue that, given the complex nature of resistance within organizations, as well as the large impact that this particular innovation will have on medical care in our society, additional study of the integration of PBL programs into medical education is warranted.

The tensions which occur between those who support PBL curricula, those who oppose it, indicate a struggle for ideological control within the medical education culture--a struggle which manifests itself in both the subtle and overt communication practices of the members of a particular medical school. Indeed, given the conflict described above, the introduction of the PBL program at a major medical school offers itself as an intriguing site to study the ways in which the members of the medical school adapt to pedagogical innovation.

Although a tremendous amount of literature exists which addresses program design and particular educational methods, except for the work of Kaufman (1985), virtually nothing exists which addresses the experiences of those who are in the process of

implementing such programs. Our orientation toward communication scholarship is useful here, for it leads us to take a keen interest in how symbols are used to co-create ever emerging organizational cultures. In this study, we explore how the members of a medical education institution use communication processes to help them make sense of an innovation which significantly impacts their organizational culture.

For several years, we have been interested in the ways symbols operate tacitly and overtly to form and preserve cultures within organizational settings. Additionally, as teachers, we are concerned with a number of learning issues, most particularly the lack of critical thinking which is all too apparent in our academic system. A serendipitous progression of events led us to conceive of a study in which these interests/concerns could merge into a project which is not only useful for us, but also one which could lend some critical insight into the ways the members of this particular educational organization symbolically deal with the institution of PBL into what has, until recently, been a very traditional medical school program. Specifically we focus on how organizational members make sense of the PBL program and the students involved therein.

The Context

During the early 1990s, we were organizational members at MWCOM[1]. One of the privileges of being employees who helped faculty members facilitate courses was that we could make full use of the beautiful state-of-the-art learning center. Indeed, we had open access to books, electronic media, computers--and to the conversations of the many medical students who frequented the learning center. It was in the learning center that we first became cognizant of the fact that there were two kinds of students at MWCOM--those enrolled in the traditional learning curriculum and those enrolled in the PBL curriculum. Although we had a vague understanding that there were differences

1. MWCOM is a pseudonym. Information regarding the research site and the research population is included in the appendix.

between the students in each of the respective tracks, we were not sure what those differences were. However, we did notice that the two sets of students rarely shared pizza, notes, or more than perfunctory greetings.

Although we noticed that there seemed to be a mutual lack of interest between the traditional students and the PBL students, it was not until one late spring evening that we became aware of any real tensions existing between the two groups. Several traditional students were sitting around in the library discussing the upcoming mock medical board examinations, and the talk turned to the inadequate preparation of "those PBL students," as well as how the PBL students "thought they were better than everyone else," and were "pampered babies."

Because we worked strictly with the traditional curriculum, we knew very little about the PBL students, and because what we did know was heavily flavored with the sentiment of the traditional students, we were inclined to agree. However, during the following summer, one of us worked as an intern for the PBL coordinator, and thus gained an understanding of the PBL project--as well as a realization that the tension which we had perceived extended well beyond the students and into every level of the culture at MWCOM.

The particular struggle that was being waged at MWCOM is a compelling and timely one for educators. Specifically, at issue is the diffusion of a controversial innovation, the PBL--a program which is based on the tenets of adult problem-based learning and one which represents a radical departure from the established mode of medical school instruction at MWCOM.

Huberman and Miles (1984) point out that "school improvement is a messy, rich process full of coercion and shared struggle, indifference and heavy involvement, uncertain results and real payoffs. That process, deeply conditioned by local history, takes place over a long period of time--usually several years" (p. 1). One important justification of

our study includes the fact that the educational innovation taking place at MWCOM is at an early point in its life-history--a point during which few things are resolved, and political tensions are at their peak. Indeed, a discussion with Everett Rogers in October of 1996 revealed that he was also very interested in a study of organizational members' resistance to the problem-based learning curriculum within the medical school at the University of New Mexico. However, Rogers complained that the program had already been in existence for over a decade and that he felt he had "missed the opportune time" for such a study. Indeed, Rogers encouraged us to move ahead with our project, noting that we were "in the right place, at the right time, doing the right study."

We believe that Rogers was right. Not only had we been members of this organization during the critical year that the PBL program was launched, our unique positions as organizational members--one of which worked in both programs--provides us with a rich view of the MWCOM culture, as well as a multi-sided perspective of the relative merits of both curricula. Additionally, our dual status as researchers and former organizational participants at MWCOM ensured that we were granted access to important organizational meetings and interviews with key informants.

Data Gathering

We collected the main body of data from in-depth, semi-structured interviews and focus groups with eighteen key administrative and faculty members who--despite various levels of knowledge of the pedagogy which undergirds PBL--have been heavily involved in, and affected by the curricular change at OUCOM.

The interviews were loosely structured and the questions only served as guides intended to elicit participants' responses about the way the PBL was being implemented into the MWCOM organization. Permission to record the interview was attained from every participant except two, and permission to use all data gathered from the interview was obtained by all participants. After the interview process, I had gathered approximately 30 hours of audiotaped data, which were then transcribed.

Although our primary means of data collection derived from the interviews, we also obtained data from an hour-long focus group session with twelve participants--four women and eight men. Eleven of the participants are second year students enrolled in the traditional curriculum. We chose these particular students because they had entered MWCOM during the same fall that the PBL track was being introduced. These students had the opportunity to interact with the PCC students on a regular basis, and watched the PBL program unfold during its initial stages. The twelfth participant occupied a unique position--he was a fourth year medical student, as well as a "fellow" who worked with both students in the traditional curriculum as well as students in the PBL system. Although this participant was technically a student, he was in close contact with the faculty, and therefore was in a position to closely interact with the faculty as well as the students.

After transcribing the data, we have divined three primary ways that members at MWCOM make sense of the PBL students and the PBL program. Specifically, our analysis reveals that: 1) organizational members perceive an unfair allocation of resources for those enrolled in the PBL curriculum, 2) organizational members perceive that the PBL students enjoy a "positive quality of life," and 3) organizational members perceive that those enrolled in the PBL curriculum have adapted positive role socialization with regard to their chosen profession.

Analysis and Discussion

The golden children: Unfair allocation of resources

As they related their narratives, organizational members at MWCOM articulated their perception that the students enrolled in the PBL program received an inordinate amount of resources. Indeed, a number of organizational members framed their perceptions by casting the traditional students as somewhat neglected children who were forced to watch their "golden" counterparts flourish. One of the more powerful symbols of the PBL's privileged status was the college sponsored weekly lunches during which

PBL students ate with various faculty members at local restaurants. Upper-level administrator/faculty member Forest recalled that such meetings were justified as ways "to let the students provide important feedback to the PBL in a relaxed atmosphere." However, mid-level administrators and students in the traditional track claimed that this type of luxury was not extended to the traditional students.

Alice, a mid-level administrator who has close contact with students in both curricula, provided a "stepchildren" metaphor to explain how, in her view, obvious manifestations of favoritism factored heavily into the way the traditional students at MWCOM responded to the PBL curriculum.

> There were many ways that the [traditional] students were really feeling like the stepchildren of the organization because they did not get as much early clinical contact (exposure to patients). The traditional students were angry, they were hostile because the director of the PBL would take the students out to lunch once a week, and the traditional students knew about that and were very upset because no one was paying them that kind of attention. Like I said, the [traditional] students felt like stepchildren because all the attention of the college was being paid to these twenty-one students and the [traditional] students felt very much left out. Especially when they saw the interactions of those students with the faculty, they would be very envious of it. It was very hostile and we tried to have some sessions where we let people talk, but I'm not sure that made it any better. . . .Anyway, so we have tried to encourage students to mix and mingle, but there's still an "us against them" mentality, although its not nearly as bad now as it was.

Continuing to draw on the notion of "step- children," some mid-level administrators felt as if the traditional students were "getting the short end of the stick" in terms of faculty instruction. Ken, one mid-level administrator who often observed the students in both curricula interact with physicians in laboratory situations, explained:

> When the traditional students see the clinical faculty going into the little PBL room and showing them how to insert a little intubation tube into a cadaver. . . .Or, when they see the pathologist in there talking to them and they see the surgeons in there talking to them and interacting--I mean, here are the traditional students like kids with their noses pressed up against a window--There's no question in my mind that the [traditional] students know that the PBL students are getting the better education.

Perhaps the group which experienced the most unease, given the cultural shift, were the students in the traditional curriculum. Indeed, a sort of "sibling rivalry" was articulated by the traditional students during a focus group.

For example, R.J., a traditional student, observed that "twenty percent of the [PBL] students use up eighty percent of the resources." Paul, another traditional student supported this observation, noting that he was in the learning resource center when:

> Dr. Thomas came in with somebody from another med school who was looking to start up a PBL program, and he said--I heard this from his mouth--'We are installing more computer rooms for the [PBL] students'. Not for *all* the students, but for the [PBL] students.

In addition to feeling that the PBL students were afforded a larger portion of the technical resources than they themselves could obtain, many of the traditional students believed that the PBL students received more than their share of faculty attention due to the low faculty-student ratio in the PBL program. For example, Brian commented that:

> We get a test back and we. . . have to make special efforts just to see the test again. They [the PBL instructors] come in and go over the test questions with them. So in my opinion they get real feedback. We don't get squat. We get a number and that's it.

Linda was another traditional student who commented on the lack of contact time that the traditional students had with the physician instructors, noting that this was a

primary cause of the tension and lack of camaraderie between the traditional students and their PBL counterparts. As Linda expressed it:

> It's like, why should they ask us [for help] when they can get a clinical faculty member to help them? 'I'll just go to the top. . . If I'm gonna get one-on-one with Dr. Wilmont, why should I ask you a biochem question?

Organizational members' talk about the PBL program's inequitable consumption of both technical and personal resources turned to discussion about the "excessive way" that the PBL program was marketed to the medical community at large. One traditional student, Georgia, remarked that in terms of media attention, the traditional curriculum was "treated like a red-headed step-child. You open up newspapers and journals, and there goes another PBL program with plenty of pictures of PBL students." R.J., a traditional student, asserted that, "the PBL is their baby, so they're gonna treat it special, and whatever it takes to make it look good, ya know they're gonna do it."

The observations of the traditional students were corroborated by upper- and mid-level administrators, many of whom also framed the tensions between the two groups as "sibling rivalry." One mid-level administrator, Paula, spoke at length about the difficulty of juggling the resources between the two programs and harkened back to the "parents of two children" metaphor, noting that:

> We now have two children as it would be, and we're equally involved in parenting both children. . . but still, it's been my perception. . . that whatever the PBL wanted, they were able to get--that the other administrative leadership in the college wanted to do whatever was necessary to make the program go. Money was not as much of an issue.

The perceived inequities in the material and faculty resources for each of the respective curricula were enough to construct an overall belief that the PBL students were "privileged children." However, some mid-level administrators addressed a related issue which added another layer to this particular cultural construction. To those

administrators, some PBL students, like so many children of privilege, acted like "spoiled brats."

Paula lamented that, although she was among those who had reinforced the overall belief that the PBL students were "better than the other students," she feared that in the process:

> We've created a monster, a real brat, in that we've taken in a group of students, we've given them a fair amount of independence and power, and courted them. And, because we want the program to succeed, we give them special favors and treat them differently than we do the other students. So when it's time for us to come around and say, 'now wait a minute, you screwed up,' we can't. Because once we've put ourselves in the role of 'buddy,' then it's hard to come down on people. This results in serious boundary issues.

As a mid-level administrator who worked with students in both curricula, Alice harbored similar sentiments about the PBL students and gave specific accounts of their "bad behavior." While Alice acknowledged that "some obnoxious personalities" might self-select for such a program, she felt that a good deal of the "bad behavior" primarily stemmed from the preferential treatment that instructors and clinicians gave to the PBL students. As Alice related:

> I heard a story from patients who were in the clinic that had no connection with MWCOM and they described a student, and remembered his first name, who was correcting the doctor! I mean they were appalled! It was my understanding that some of the faculty were telling them that 'you're just as good as an intern!' It was sort of like they were being socialized to believe this--acting on what they'd been told, and what they thought they'd been told, so there were some real problems.

The line between resentment and pity for the PBL students was particularly blurry for members of the mid-level administration, for despite their misgivings, some of the same mid-level administrators who viewed the PBL students as "brats" and "spoiled kids"

who were "behaving badly" also expressed understanding and sympathy toward the uncertain and highly politicized situation into which the PBL students were thrust. For example, Alice expressed her compassion in terms of recalling "the pressures of being the favored son." Mid-level administrator Paula felt that, "even though these [PBL] kids act childish and obnoxious at times, they are all sort of innocent. Ya know, they signed on to a program not knowing the academic politics of it." Bridget, another mid-level administrator, wanted to make sure that she was "being fair" to the PBL students by acknowledging that, "after all, they have taken on this huge risk. I mean, who knew if this was going to work? They had to be extremely independent students."

As these excerpts from the interviews suggest, traditional students and mid-level administrators both faced the pressures of sorting through a complex set of political and cultural issues which emerged at MWCOM with the advent of the PBL curriculum in metaphoric terms of "family."

The laugh track: A positive quality of life

The previous comments represent a clear bias toward the PBL program from the members of the faculty and upper-level administration with whom we spoke. However, other organizational members without such an overt innovation bias (i.e., the traditional students) also expressed their views about the positive "quality of life" values that the PBL program promoted among the students who were enrolled in it.

For example, R.J., Paul, and Linda were among the traditional students who had nicknamed the PBL curriculum "the laugh track." Larry, an upper-level administrator and faculty member, provided a detailed account of how this particular moniker was assigned to the students in the PBL program:

> The PBL and the traditional students were in the gross anatomy lab together at various times during the year, and starting with that first year, the PBL became known as "the laugh track" because the traditional students would be frantically, furiously carving away or fretting about what they were going to be tested on, but

> they'd see the people in the PBL laughing and they'd hear 'em through the doors--having a great old time, enjoying themselves, having just a wonderful time. That ought to tell you something--that students actually laugh during a class--there has to be something going on. Of course the easiest conclusion to make is that the PBL students aren't taking [their gross anatomy lesson] seriously, but what [the laughing] is, is that they are learning to really love this stuff.

Thus, other than the PBL students themselves, perhaps the group of organizational members who received the clearest image of the relaxed nature of the PBL students were the traditional students, one of whom described the PBL students as "happy campers." Indeed, reflecting back on the earlier theme of "sibling rivalry," many of the traditional students whom we interviewed expressed envy at the many pedagogical benefits that the PBL students enjoyed. For example, Brian, a traditional student, noted that, because of the collaborative learning model, "hands-on" training, and ability to identify their own learning objectives, the PBL students "are a more relaxed group of individuals." As Brian commented:

> Unlike [the traditional students] who depend on some faculty member to dispense the 'important knowledge,' [the PBL students] get to decide what their learning objectives are, and that's what they're tested on. I think that's one big difference. . . so they have a totally different outlook on taking a test. . . I mean, they're just so much more relaxed. And they--culturally, I guess--they just become different students.

In the opinion of traditional student Thomas, the lack of formal classroom contact hours rendered the learning process more enjoyable for the PBL students, for, as he noted, the PBL students seemed to be:

> a much happier group of people than us--a much more relaxed group of people [who say] 'let's go to lunch. Let's take two and a half hours and come back.' And I'm like, 'no, let's take a half hour and get it finished,' and they go 'awwww!' It's a

whole different focus. They're not as pushed. They don't have to spend eight hours a day listening to irrelevant stuff.

Ron, a traditional medical student, also expressed envy at the PBL students' lack of "time stuck in lecture," as well as amazement that PBL students get to experience "much more of a life on the outside." Ron communicated his astonishment in the following:

> Actually, he's not too bad of a person, but he has two jobs, and he goes away camping every weekend. I mean I walked into [a local store] in the mall and [the PBL student] is working. I'm like, 'WHAT?!?' And he's also an R.A., and that's a lot of time! That should tell you something! We couldn't. . . I could not pass my classes spending that amount of time doin' other things! It blew my mind when I walked in there! I'm like, 'Oh my God!

<u>They act like docs. Positive role socialization</u>

Traditional students with whom we spoke remarked that in addition to their "relaxed take on life," the students in the PBL curriculum seemed to possess a more confident demeanor than did the traditional students. Joan, a traditional student, felt that such confidence stemmed from the fact that the case-study approach to learning--which is one of the hallmarks of PBL--helped the PBL students to get a stronger grasp on course content.

Joan recalled a particular experience from her respiratory class during which she had been introduced to the case-study method of medical education. The experience instilled in Joan a belief that such a method was instrumental in producing excellent and assured students. However, the experience also signaled Joan's doubt as to the effectiveness of the traditional mode of medical education. As Joan noted:

> I learned so much 'cause you put everything together. They gave you the anatomy, they gave you the bug or whatever was causing it, they told you how to treat it. . . and all that stuff I remember! And that's what the whole [PBL program] is based on! They get the case studies, they get all the parts, and they put it all together as

> a whole, and that kinda scares me--that they're gonna know so much more. And I've talked to them about. . . the [national medical board examination] and they don't seem scared--at least the ones I've spoken to, and THAT scares me 'cause I'm scared about the boards and there's a ton of stuff I've forgotten!

Although two other traditional students, Eric and Jan, quickly reassured Joan that the reason she remembered the respiratory case so well is because of her extensive basic science background--a background which the PBL students did not have--Joan remained unconvinced, reiterating that [a particular PBL student] "seemed really confident and it just kinda frightened me that they were getting something that we weren't."

The traditional students were not the only organizational members who noticed the assured behavior of the PBL students. Two groups that were obviously and unanimously "in favor" of the way PBL students performed were members of the upper-level administration and faculty members. Dan, a basic-science faculty member, also commented that "one of the things that set the [PBL students] apart from the [traditional students] was their confident attitude." Indeed, Dan, who had originally been a "dyed-in-the-wool opponent of the PBL," noted that:

> the most compelling argument for the PBL is that the students act like docs. I'm in awe of their ability to pull relevant information from their knowledge base. I'm impressed by their attitude with other docs and by their ability to ask the right questions--traditional medical students ask, 'do I have to know this?' PBL students ask, 'where can I get more information?' The PBL students understand and use clinical jargon better; they are facile at dealing with patients. They are the best sales-folks for the PBL as far as I'm concerned.

Given that the upper-level administration was so highly invested in the success of the PBL track, it came as no surprise that those upper-level administrators with whom I spoke touted both the PBL program and the students enrolled in it. For example, Dr. West recalled a curriculum conference in which the PBL students held an exhibition

session for physicians around the state. In her words, the physicians were "unbelievably impressed by the PBL students." In another example, Larry, who is both an upper-administrator and faculty member, acknowledged that while a few members of the basic science faculty continued to resist embracing the PBL curriculum, nearly all of the rest of the faculty members "bought in" to the notion of PBL based on their positive experiences with the PBL students.

Indeed, many faculty members revealed through their talk that they viewed the PBL students in a favorable light. These results contradicted our earlier assumptions that the faculty members would harbor resentment toward the PBL students who may have been perceived as usurping the faculty members' own authority. Conversely, as evidenced by some of the following examples, the faculty members were favorably impressed with the academic performance of the PBL students.

For instance, basic science faculty member Alex also related positive remarks about the PBL students:

> I was utterly amazed by the whole thing and utterly delighted because I felt I was using my time very effectively, and they were using their time very effectively. They were prepared when they came for [classes], so in a sense, their questions drove the class through what we would cover in a traditional course. But because it was in response to their questions, I could give succinct answers without feeling I had to. . . give them everything from ground zero, because I could tell by their questions that they knew a lot already. . . . That was a real highlight for me for teaching, and that was the thing that has convinced me that this is the direction to go.

Larry recalled another incident in which the PBL students made an excellent impression on a faculty member at MWCOM who had previously been "anti PBL" but then had watched the PBL students answer questions put to them during a "challenge panel." As Larry remembered:

> [A particular faculty member] was very impressed with the amount of knowledge that they had, the amount of anatomical information that they seemed to have mastered. . . .But, what he was mostly pleased with was that after the class, several students walked to him and thanked him for his challenging questions, and he said he had never had that happen to him--that students had come up and appreciated what he had done to challenge their knowledge.

The previous accounts indicate that, rather than resenting students who might pose a challenge to their authority and "the way things are done around here," the faculty members with whom we spoke viewed PBL students as colleagues and appreciated the fact that these students were not "wasting [the faculty's] time"--something that had been a matter of concern during the planning stages of the diffusion process.

Happy students who love learning and act like physicians are one thing, but for other organizational members at MWCOM, the actual proof of the validity of the PBL program came in the form of the PBL students' performance on the first phase of the national medical boards--the standardized exam which all medical students were required to take after completing their second year of medical education. As Bridget, a mid-level administrator, expressed it, "We were going around holding our breath for the few weeks before the board scores came out." Thus, supporters of the PBL program enjoyed one of their finest moments when the first group of PBL students received their scores for the medical boards and discovered that their scores were higher than the national average and higher on average than the students in the traditional curriculum. Mid-level administrator/faculty member Forest, maintained that, in the three and a half years since the PBL initiative had been undertaken, this was the most critical incident in terms of proving the pedagogical validity of the PBL program to the those members of MWCOM who had continued to express their misgivings for the project. In Forest's words, "You could hear the silence from the opposite camp [i.e., some of the basic science faculty members]." Indeed, Sydney, a faculty member and mid-level administrator, noted that,

since the first set of board scores arrived, many of those who initially were most adamantly opposed attempted to integrate PBL teaching techniques in their own classrooms.

In an observation that contrasts sharply with some of the comments made by organizational members who viewed the PBL students as "spoiled kids," a number of mid-level administrators contended that their more flexible schedule, as well as their small group-based learning style, allowed PBL students to exhibit a more altruistic attitude toward members of their own curriculum, as well as toward members of the traditional curriculum. As one mid-level administrator, Kathleen expressed it,
such an attitude had a positive impact on what was often a tense environment--the learning resource center. As she observed:

> One of the most outstanding things I've noticed about the PBL students over the duration of the program is that they seem to be a very helpful group. They're always willing to help one another, or help another student that's not even in the PBL program. If traditional students are having a problem--don't know how to work something on the computer or don't know where to find something, there's usually a PBL student hanging around that will have a suggestion. These students are a far cry from typical med students. It's not that you don't ever find that from the other students, but I don't think it's nearly as prevalent.

Cory was a faculty member who recounted similar instances and offered a suggestion as to why the PBL students "seem so well-balanced" and cooperative:
They're in a cooperative learning environment where it is to their advantage to help one another. They're expected to exchange information, and so on. There's a whole lot less of that in the other curriculum--in the standard curriculum you see a kind of competitiveness. In some of [the traditional student's] actions there can be a withholding of information, rather than that kind of sharing.

Conclusion

It has been our primary goal in this study to elucidate some of the ways that the members of a medical educational institution make sense out of the radical pedagogical innovation which is taking place in their school. After conducting interviews and focus groups with the members at MWCOM, we have organized our analysis according to three primary themes which revolve around how organizational members make sense of the PBL program and the PBL students. First, we explored how organizational members expressed their view that those enrolled in the PBL curriculum were afforded more organizational resources than were those students enrolled in the traditional curriculum. Second, we examined organizational members' perceptions that the PBL students enjoyed a more positive quality of life than did their traditionally educated counterparts. Finally, we focused on how organizational members related their perceptions that the PBL students were undergoing a positive role socialization with respect to their chosen profession.

An important aim of our study has been to enrich our understanding of the establishment of innovation within one of the most traditional educational institutions--medical education organizations. This particular study situates itself squarely within the context of medical education, an institution which has few rivals in our system of social discourse which privileges medical knowledge above most other forms of knowledge. Although scholars such as Bloom (1986) and Kaufman (1985) recognize that it is just as important to understand <u>how</u> educational innovation gets accomplished at such levels as it is to measure the macro-outcomes of such innovations, there has been very little literature which sufficiently addresses this concern, thus we know little about how such processes work within the specific context of medical education. It is our hope that by providing a "real life," day-to-day picture of the exigencies inherent in accomplishing

the PBL diffusion, this particular study can be of use to educators who wish to introduce innovative programs into those educational systems with similar concerns.

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APPENDIX

The Location

MWCOM is a medium-sized medical school located within a large university in the United States. Established by a state general assembly, MWCOM was instituted to help alleviate the state's growing shortage of family physicians and to train doctors for chronically under-served areas. The educational program at MWCOM has been tailored to meet this legislative mandate.

Description of the Population

The organizational members at MWCOM are an ethnically, socio-economically, and educationally diverse group of people who total nearly 1,000.

The Students

The largest formal sub-group of organizational members at MWCOM are the medical students themselves. The student population is comprised of nearly 400 students (200 of whom are on campus, and 200 of whom are on rotation at various remote hospital sites). The "on campus" population is divided into a "first year phase" and a "second year phase." The "third phase" and "fourth phase" students perform their internships at regional sites. There are approximately 100 students in each phase, approximately 80 of whom are part of the traditional curriculum, and approximately 20 of whom are part of the PBL curriculum. The student population is divided nearly equally along gender lines. In terms of race and socio-economic status, the student population is a fairly diverse group. Although approximately 75% of the students are between the ages of 23-30, a quarter of the students are "non-traditionals."

The Support Staff

Nearly 300 of the MWCOM population are support staff members. Most of these members are employed in clerical roles. Like the students, this group is socio-economically and educationally varied, but it is more heterogeneous in terms of race

and sex--approximately 80% are Caucasian females. The majority of the support staff members have lived in the area for most of their lives.

The Administration

Approximately 130 mid- and upper-level administrators are employed at MWCOM, approximately half of whom are male, and half of whom are female. Like many of the students, a number of administrators work in remote locations around the state; however, approximately 50 work at the local campus. The members of this group are primarily upper-middle class and well-educated. Many members in this group are also physicians/faculty members or basic scientists/faculty members who serve multiple roles within the college. Other members of this group are in charge of maintaining the various systems of student support (e.g., the student financial services, the student admission services, the learning resource centers, the simulated patient laboratories, and the gross anatomy laboratories).

The Faculty

The smallest formal sub-group at MWCOM is comprised of approximately 120 faculty/physicians, approximately 40 of whom are basic scientists, and approximately 80 of whom are clinical physicians. Although both groups instruct the MWCOM medical students, for the sake of clarity, I will describe each group separately.

The clinical physicians. The clinical physicians are primarily Caucasian, upper-middle class, and well-educated. Although many of the physicians are from the state, relatively few are from the immediate surrounding area. There are approximately 25 female clinical physicians and 55 male clinical physicians in the clinical physician population. Forty-five physicians are family practitioners, while approximately 35 practice some form of specialty medicine (e.g., emergency medicine, neurology, geriatric medicine). In addition to their teaching and administration duties, most of the physicians practice at the local hospital, or at local and area clinics, all of which are the property of MWCOM.

The basic scientists. Like their clinical physician counterparts, most of the 40 basic scientists are Caucasian, upper-middle class, well-educated, and not originally from the immediate area. Females comprise approximately one-fourth of the basic science population. The basic scientists teach and research in a number of areas (e.g., microbiology and genetics, anatomy, physiology). The basic scientists are employed by MWCOM to teach the medical students. However, they are also employed by the university's College of Arts and Sciences, which grants promotion and tenure based on teaching graduate and undergraduate students, research, and service to the academic community.